

CURRICULUM VITAE

NAME, RANK, ID NUMBER **Arie Ruzin** **Associate Professor** **ID 016959090**

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DATE AND PLACE OF BIRTH 30/03/64, Former USSR

DATE OF ARRIVAL IN ISRAEL 02/02/76

A. EDUCATION

1981-1982 BOSMAT, Haifa, Israel
Subject: Electrical Engineering, Analog and digital electronics, microprocessors
Degree: Practical Engineer

1984-1989 Technion Israeli Institute of Technology, Haifa, Israel
Subject: Electrical Engineering
Degree: B.Sc.

1989-1992 Technion Israeli Institute of Technology, Haifa, Israel
Subject: Electrical Engineering, Microelectronics
Degree: M.Sc.
Title of Master's Thesis: Photon assisted epitaxial MOCVD growth and characterization of Hg-Cd-Te group materials
Names of supervisors: Prof. Yael Nemirovsky

1992-1997 Technion Israeli Institute of Technology, Haifa, Israel
Subject: Electrical Engineering, Microelectronics
Degree: D.Sc.
Title of Doctoral Dissertation: X and Gamma rays sensors in II-VI group materials
Names of Supervisors: Prof. Yael Nemirovsky, Prof. Giora Shaviv

B. ACADEMIC AND PROFESSIONAL EXPERIENCE

1984-1989 BOSMAT College, Haifa, Israel
Subject: Analog and digital electronics

Department: Electrical Engineering

Rank : Teacher

1989-1996	Technion – Israel Institute of Technology, Haifa, Israel <u>Subject:</u> Analog and digital electronics, semiconductors <u>Department:</u> Electrical Engineering <u>Rank :</u> Teaching Assistant
1996-1997	Technion – Israel Institute of Technology, Haifa, Israel <u>Subject:</u> Analog and digital electronics, semiconductors <u>Department:</u> Electrical Engineering <u>Rank :</u> Research Fellow and Lecturer
1997-1999	CERN, Geneva, Switzerland <u>Subject:</u> Semiconductor detectors, Radiation-induced defects <u>Department:</u> Experimental Physics <u>Rank :</u> Research Fellow
1999-2006	Tel Aviv University, Tel Aviv, Israel <u>Subject:</u> Semiconductor devices, Radiation-induced defects <u>Department:</u> Faculty of Engineering <u>Rank :</u> Senior Lecturer
2006-Present	Tel Aviv University, Tel Aviv, Israel <u>Subject:</u> Semiconductor devices, Radiation-induced defects <u>Department:</u> School of Electrical Engineering <u>Rank :</u> Associate Professor

C. ACTIVE PARTICIPATION IN SCIENTIFIC MEETINGS

Year	Name of Meeting, City, Country	Detailed Activity (Poster/Lecture/Organizing etc.)
14-16 Dec. 1992	SPIE Conference (8th Meeting on Optical Engineering), Tel Aviv, Israel	Lecture
7-8 March 1995	18 th IEEE Conference, Tel Aviv, Israel	Lecture
29 Nov. 1995	Annual Conference of the Israeli Assoc. for Crystal Growth, Jerusalem, Israel	Lecture
5-6 Nov. 1996	19th IEEE convention, Jerusalem, Israel	Lecture

25-31 May 1997	7th Pisa meeting on advanced detectors "Frontier detectors for frontier physics", <i>Isola d'Elba, Italy</i>	Poster
12-14 February 1998	3rd ROSE – RD48 workshop, <i>Hamburg, Germany</i>	Lecture
March, 1998	2nd International Conference on Radiation Effects on Semiconductor Materials, Detectors and Devices, <i>Florence, Italy</i>	Lecture
August 1998	24th International Conference of the Physics of Semiconductors (ICPS 24), <i>Jerusalem, Israel</i>	Poster
October 1998	6th International Conference on Advanced Technology and Particle Physics, <i>Como, Italy</i>	Lecture
October 1998	International conference Vertex 98, <i>Santorini, Greece</i>	<u>Invited Lecture</u>
December 1998	4th ROSE – RD48 workshop, <i>CERN – Geneva, Switzerland</i>	Lecture
April 1999	First workshop of European Network on Defect Engineering of Advanced Semiconductor Devices (ENDEASD), <i>Santorini, Greece</i>	Lecture
20-25 June 1999	8th International Workshop on Vertex Detectors VERTEX'99, <i>the island Texel in the Netherlands</i>	<u>Invited Lecture</u>
23-25 June 1999	4th International Conference on Large Scale Applications and Radiation Hardness of Semiconductor Detectors, <i>Florence, Italy</i>	Lecture
18-23 July 1999	SPIE's 44th Annual Meeting, <i>Denver, Colorado, USA</i>	Lecture (silicon)
18-23 July 1999	SPIE's 44th Annual Meeting, <i>Denver, Colorado, USA</i>	Lecture (CdZnTe)
Nov. 1999	10th Workshop on Dielectrics in Microelectronics, <i>Barcelona, Spain</i>	Lecture

11-12 April 2000	21st IEEE convention, <i>Tel Aviv, Israel</i>	Lecture
May 2000	8th Pisa meeting on advanced detectors “Frontier detectors for frontier physics”, <i>Isola d’Elba, Italy</i>	Lecture
June 2002	9th European symposium on semiconductor detectors, <i>Schloss Elmau, Germany</i>	Lecture (on Bulk silicon)
June 2002	9th European symposium on semiconductor detectors, <i>Schloss Elmau, Germany</i>	Lecture (on interface silicon)
July 2002	Annual SPIE conference, <i>Seattle, Washington, USA</i>	Lecture
October 2002	1st Workshop of RD50 Collaboration, <i>CERN, Geneva, Switzerland</i>	Lecture
May 2003	2nd Workshop of RD50 Collaboration, <i>CERN, Geneva, Switzerland</i>	Lecture
25-31 May 2003	9th Pisa meeting on advanced detectors “Frontier detectors for frontier physics”, <i>Isola d’Elba, Italy</i>	Poster
22 Oct. 2003	22nd IVS Annual Conference, <i>Tel Aviv, Israel</i>	Lecture
22 Oct. 2003	22nd IVS Annual Conference, <i>Tel Aviv, Israel</i>	Lecture
February 2004	12th Sede Boker Symposium	Lecture
4-8 May 2004	4 th international workshop of RD-50 Collaboration on detectors for ultra-high luminosity, <i>CERN, Geneva, Switzerland</i>	Lecture
23-26 May, 2004	9 th Topical Seminar on Innovative Particle and Radiation Detectors, <i>Siena, Italy</i>	Lecture
26-28 Sept. 2004	First CADRES Workshop on Defects Relevant to Engineering Advanced Silicon-based Devices, <i>Santa Tecla, Catania, ITALY</i>	Lecture

2-3 Oct. 2004	Invited seminar at Czech Technical University, <i>Prague, Czech Republic</i>	Lecture
7-8 Oct. 2004	Invited seminar at the Institute of Nuclear Science of Ukrainian Academy of Science, <i>Kiev, Ukraine</i>	Lecture
14-16 Oct. 2004	5 th International workshop of RD-50 Collaboration on detectors for-ultra high luminosity, <i>Florence, Italy</i>	Lecture
13-14 June 2005	EU 2 nd International workshop of CADRES Collaboration on detectors for ultra high luminosity, <i>St. Petersburg, Russia</i>	Lecture
21-27 May 2006	10 th Pisa meeting on advanced detectors "Frontier detectors for frontier physics, <i>Isola d'Elba, Italy</i>	Lecture
7-11Sept. 2006	3 rd CADRES Workshop on Defects Relevant to Engineering Advanced Silicon-based Devices, <i>Crete, GREECE</i>	Lecture
10-13 Oct. 2006	6 th International Conference on Radiation Effects on Semiconductor Materials Detectors and Devices, <i>Florence, Italy</i>	Lecture
25-28 June 2006	8 th RD50 - Workshop on Radiation hard semiconductor devices for very high luminosity colliders, <i>Prague, Czech Republic</i>	Lecture
16-18 Oct. 2006	9 th international workshop of RD-50 Collaboration on detectors for ultra-high luminosity, <i>CERN, Geneva, Switzerland</i>	Lecture
8-12 Oct. 2007	10th ICATPP Conference (International Conference on Advanced Technology and Particle Physics), <i>Como, Italy</i>	Lecture
15 Oct. 2008	7th International Conference on Radiation Effects on Semiconductor Materials Detectors and Devices, <i>Florence,</i>	Lecture

Italy

24 – 30 May, 2009	11th Pisa Meeting on Advanced Detectors, <i>Isola d'Elba, Italy</i>	Lecture
Dec. 2009	Israeli Material Science Conference, <i>Tel Aviv, Israel</i>	Lecture
30 May 2010	16th RD50 Workshop, <i>Barcelona, Spain</i>	Lecture
12 Oct. 2010	RESMDD09 - 8th International Conference on Radiation Effects on Semiconductor Materials Detectors and Devices, <i>Florence, Italy</i>	Lecture
8 May 2011	E-MRS Conference, <i>Nice, France</i>	<i>Scientific committee and Prize committee</i>
21-23 Nov. 2011	19th RD50 – Workshop, <i>Geneva, Switzerland</i>	Lecture
9-13 April 2012	2012 MRS Spring Meeting, <i>San Francisco CA, USA</i>	<u>Invited Lecture</u>
20-26 May 2012	12th Pisa Meeting on Advanced Detectors, <i>Isola d'Elba, Italy</i>	Poster
12-15 Oct. 2012	RESMDD12 - 9th International Conference on Radiation Effects on Semiconductor Materials Detectors and Devices, <i>Florence, Italy</i>	Lecture
1-5 April 2013	MRS 2013 (Material Research Society – Spring meeting), <i>San Francisco, USA</i>	Lecture
25-29 Aug. 2013	SPIE Optics + Photonics 2013 Conference, <i>San Diego, USA</i>	Lecture, organizing committee, session chair
3 Oct. 2013	Special, invited seminar, <i>CERN, Switzerland</i>	Lecture
08-13 Oct. 2014	RESMDD2014, <i>Florence, Italy</i>	Lecture
24-30 May 2015	13th Pisa Meeting on Advanced Detectors, <i>Isola d'Elba, Italy</i>	Poster
June 2015	E-MRS Conference, Session K, <i>Lille, France</i>	<i>Organizer, Scientific committee, Chair, and Prize committee</i>
15 Feb. 2016	VCI conference, <i>Vienna, Austria</i>	<i>Poster (of my student)</i>

23 Aug. 2016	Special seminar with CNNA 2016 conference, <i>Dresden, Germany</i>	<u>Invited Lecture</u>
20 Sept. 2016	NorthWestern-TAU workshop, <i>Chicago, USA</i>	Lecture
23 Aug. 2017	SPIE Optics + Photonics 2013 Conference, <i>San Diego, USA</i>	<u>Invited Lecture</u>
27/5-2/6 2018	14th Pisa Meeting on Advanced Detectors, <i>Isola d'Elba, Italy</i>	Poster
18-22 June 2018	E-MRS Conference, Session G, <i>Strasbourg, France</i>	<i>Organizer, Scientific committee, Chair, and Prize committee</i>
13-15 Aug. 2018	2 nd conference of semiconductor radiation detectors & international high forum, <i>Xiangtan, Hunan, China</i>	<i>Plenary talk</i>
21 Aug. 2018	Invited special seminar, <i>Tsinghua University, Beijing, China</i>	<u>Invited Review Lecture</u>
18-22 Feb. 2019	VCI conference, <i>Vienna, Austria</i>	<i>Poster (of my student)</i>

D. ACADEMIC AND PROFESSIONAL AWARDS**D.1 INTERNAL GRANTS (AT TAU)**

YEAR	FOUNDATION	TITLE	SUM	CO-RESEARCHERS	P.I.
2001	TAU INTERNAL GRANT	RESEARCH OF SiGe	15,000\$		ARIE RUZIN
2003	GORDON CENTER	RADIATION DETECTORS FOR REACTORS	5000\$		ARIE RUZIN
2012	TAU GRANT FOR HIGH RANKED ISF	ENCOURAGEMENT GRANT	21.000 NIS		ARIE RUZIN

D.2 EXTERNAL GRANTS

YEAR	FOUNDATION	TITLE	SUM	CO-RESEARCHERS	P.I.
2000-2001	MAGNETON	Si DETECTORS	300,000\$	JVAR INDUSTRIAL PARTNER	ARIE RUZIN
2002	ISF	EQUIPMENT	100,000\$		ARIE RUZIN
2002-2005	ISF	CdZnTe DETECTORS	129,000\$		ARIE RUZIN
2003-2005	PRIME MINISTER OFFICE	SILICON GERMANIUM	90,000 NIS	I. ATABAEV	ARIE RUZIN
2003-2006	EU 6TH FRAMEWORK	CADRES (ON SiGe)	45,000\$	LARGE COLLABORATION	ARIE RUZIN
2005-2008	ISF	MULTI-SCALE CONTACT FORMATION	132,000\$	I. GOLDFARB	I. GOLDFARB
2005-2009	ISF	SiGe LITHIUM COMPENSATION	196,000\$		ARIE RUZIN
2005-2008	ISF BIKURA	ELECTRON SPIN RESONANCE	147,000\$	DR. A. BLANK	DR. A. BLANK
2006-2009	MAGNETON	Infra-RED InSb DETECTORS	450,000\$	SCD INDUSTRIAL PARTNER	ARIE RUZIN
2007-2009	MAFAT	SIMULATION OF IR DETECTORS	200.000 NIS		ARIE RUZIN

E. MEMBERSHIP IN PROFESSIONAL SOCIETIES

SPIE,

Senior member of IEEE,

E-MRS,

MRS,

OePG (Austrian Physical Society)

F. GRADUATE STUDENTS SUPERVISED BY CANDIDATE

Graduated Doctoral students

2013-2017

Avraham Rosenblat

Subject: Photolithography for 3D structures

Title of thesis: Investigation of the nucleation-to-percolation transition during the early stages of metal thin film growth

Name of academic institution: Tel Aviv University

Present Doctoral students

2016-Present

Artem Brovko

Subject: II-VI compound semiconductor detectors

Title of thesis: Study of contacts to $\text{Cd}_{1-x}\text{Zn}_x\text{Te}$ and $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$ materials

Name of academic institution: Tel Aviv University

2016-Present

Pavel Baikov

Subject: Memristive devices

Title of thesis: Study of non-volatile resistive RAM based on transition metal oxides

Name of academic institution: Tel Aviv University

Graduated M.Sc students

2003-2006

Igal Yaroslavski

Subject: Radiation detectors

Title of thesis: Study of SiGe devices

Name of academic institution: Tel Aviv University

2003-2006

Lior Avital

Subject: Floating gate memory devices

Title of thesis: Temperature Effects of Read Current in NROM NVM Device in Program and Erase States

Name of academic institution: Tel Aviv University

- 2003-2005** Daniel Ramiz
Subject: Floating gate memory devices
Title of thesis: Study of reliability issues in ONO transistors
Name of academic institution: Tel Aviv University
- 2003-2006** Iliya Torchinski
Subject: AFM Characterization of CZT devices
Title of thesis: Surface study of CZT detectors by AFM
Name of academic institution: Tel Aviv University
- 2007-2010** Ori Sinkevich
Subject: Nano-contacts
Title of thesis: Study of nano-contacts on CZT by AFM
Name of academic institution: Tel Aviv University
- 2007-2010** Gilad Fransis
Subject: Infra-red InSb detectors
Title of thesis: Defect investigation in InSb IR-detectors
Name of academic institution: Tel Aviv University
- 2011-2014** Naama Argaman
Subject: Lithium diffusion into SiGe
Title of thesis: Study of Lithium Diffusion into Silicon Germanium by AFM Related Methods
Name of academic institution: Tel Aviv University
- 2011-2014** Elad Isman
Subject: Matlab simulation of a transient measurement
Title of project: Matlab simulation of TCT
Name of academic institution: Tel Aviv University
- Present M.Sc students**
- 2014-expected 2019** Dima Fraimovitch
Subject: CVD diamond detectors
Title of thesis: Contacts to diamond detectors
Name of academic institution: Tel Aviv University
- 2015- expected 2019** Omer Ben-Ishai
Subject: Laplace - Deep Level Transient Spectroscopy
Title of thesis: DLTS characterization of Si(Li) detectors
Name of academic institution: Tel Aviv University
- 2018- expected 2020** Prajwal Prakash
Subject: Memristive devices
Title of thesis: Hafnium-oxide based memristors

Name of academic institution: Tel Aviv University

2018- expected 2020

Odelya Amzallag

Subject: Transient Current Technique measurement of CZT devices

Title of thesis: TCT study of CdZnTe and CdMnTe detectors

Name of academic institution: Tel Aviv University

Post-Doctoral

2017-2018

Dinesh Veeran Ponnuvelu

Subject: Diffusion of lithium into SiGe

Name of academic institution: Tel Aviv University

2017-2018

Kamalakannan Ranganathan

Subject: HfO Memristors

Name of academic institution: Tel Aviv University

2018-Present

Ganeshraj Chellappan

Subject: Characterizing Li impact on SiGe

Name of academic institution: Tel Aviv University

G. PROFESSIONAL EXPERTISE

- *Epitaxial growth of compound II-VI group materials by MOCVD method including photon assisted growth and surface in situ cleaning.*
- *Fabrication and experimental testing and analysis of the electrical properties of M-S-M (Metal-Semiconductor-Metal) and M-I-S (Metal-Insulator-Semiconductor) devices. Including development of computerized measurements.*
- *Extensive knowledge of semiconductor device physics (FET's, BJT, Diodes, Schottky, etc.).*
- *Extensive knowledge of analog electronic circuits and digital electronic circuits.*
- *Irradiation of solid-state detectors with MIP particles and measurements of irradiation damage.*
- *Electrical characterization of semiconductors and semiconductor devices on nano-metric scale by Atomic Force Microscope*
- *Defect characterization by Deep Level Transient Spectroscopy (DLTS), and Laplace-DLTS.*

H. PROFESSIONAL ACTIVITIES

- *Scientific Committee of EMRS (France 2011)*
- *Guest Editor of EMRS (France 2011)*
- *Scientific Committee SPIE (USA 2014)*
- *Organizer EMRS (France 2015)*

- *Organizer EMRS (France 2018)*
- *Editorial Board of Springer-Nature J. of Materials Science: Materials in Electronics*
- *Scientific Committee SPIE (USA 2019)*

I. PARTICIPATION IN LARGE INTERNATIONAL COLLABORATIONS

RD-48 (ROSE Collaboration), CERN experiment : 1999-2000

RD-50, CERN experiment : 2002- present

CADRES, the Sixth EU Framework Program (Network of Excellence).

COST Action on Memristors (EU Program)